

ABSTRACT

Systems for controlling the frequency of the output signal of a controllable oscillator in a frequency synthesizer are provided. One such system comprises a controllable oscillator and a frequency control circuit. The controllable oscillator is configured to generate an output signal that has a predefined frequency. The controllable oscillator is also configured with a plurality of operational states that are controlled by the frequency control circuit. Each operational state of the controllable oscillator defines a distinct frequency for the output signal of the controllable oscillator. The frequency control circuit receives the output signal of the controllable oscillator and determines the distinct frequency for the output signal that best approximates the predefined frequency. The frequency control circuit may also provide a control signal to the controllable oscillator that is configured to change the controllable oscillator to the operational state corresponding to the distinct frequency that best approximates the predefined frequency.